20/11/24

LAB - 7

② Write a program that demonstrates handling of exception in inheritance tree. Create a base class called as "Father" and a derived class called as "Son" which extends the base class. In Father's class implement a constructor which takes the age and throws exception "Wrong age" when input age is less than zero. In Son's class implement a constructor that uses both father's and son's age and throws exception if son's age is greater than or equal to father's age.

```
class NegativeAgeError extends Exception {
int a;
public NegativeAgeError (int a) {
   this.a = a;
}
public String toString () {
   return "Negative Age: " + a ; }
}

class InvalidAgeError extends Exception {
 int a, b ;
 public InvalidAgeError ( int a, int b) {
    this.a = a;
    this.b = b;
 }
 public String toString () {
    return "Invalid age: " + a + " is less than " + b ; }
}
```

```
class Father {
    String name;
    int age;
    Father (String name, int age) {
     try {
        if (age <0) {
            throw new NegativeAgeError(age);
        }
        this.name = name;
        this.age = age;
}
 catch (NegativeAgeError e) {
  this.age = age
  System.out.println(e);}
  }
}
class Son extends Father {
 String sonname;
 int sonage;
 Son (String sonname, int sonage, String fathername,
    int fatherage) {
 super (fathername, fatherage);
 this.sonname = sonname;
  try {
    if (sonAge <0) {
        throw new NegativeAgeError (sonAge);
    }
    if (sonAge >= fatherage) {
        throw new InvalidAgeError (sonAge, FatherAge);
    }
```

```
        this.sonAge = sonAge;
    }
    catch (NegativeAgeError e) {
        System.out.println(e);
    }
    catch (InvalidAgeError e) {
        System.out.println(e);}
    }
}
class Exceptions {
    public static void main (String[] args) {
    Scanner sc = new Scanner (system.in);
    System.out.println("Enter son name");
    String name = sc.next();
    System.out.println("Enter son age");
    int age = sc.nextInt();
    System.out.println("Enter father name");
    String name = sc.next();
    System.out.println("Enter father age");
    int age = sc.nextInt();

        Son a1 = new Son(name, age, name, age);
System.out.println("End of program");
    }
}
```

Output :

Enter son name

a

Enter son age

5

Enter father name

b

Enter father age

3

Invalid Age : 5 is less than 3

Seen

Enter son name

a

Enter son age

5

Enter father name

b

Enter father age

-3

Negative Age : - 4

Invalid Age : 5 is less than - 4